

valuations than the other bidders. In this case the presence of only a few bidders does not indicate that the current high bid is close to the final price. But under their mechanism the bid increments would be small and bidding could continue for a long time, resulting in that market closing later than others. PacTel estimates that an auction conducted under its proposal would close after approximately one month (assuming its timetable of three days between bids and initial bidding increment of five percent).

130. Stopping a Simultaneous Auction at the Same Time in all Markets. PacBell, on the other hand, proposed closing bidding simultaneously -- bidding would remain open on all licenses until bidding stops on every license. This approach has the advantage of providing bidders full flexibility to bid for any license as more information becomes available during the course of the auction, but it may lead to very long auctions. Bidders might hold back (absent the activity rules proposed by PacBell in its reply comments) because there would be a cost of committing oneself early to a bid with little offsetting benefit since the chance of the entire auction closing before they could bid would be slight. Furthermore, such a stopping rule might be vulnerable to strategic delay. An incumbent wireless provider, for example, might prolong the auction by increasing bids on low value licenses simply to delay closure on higher value licenses. In its reply comments, PacBell addresses these concerns about speed of closing. To assure that bidders do not hold back, it proposes an activity rule (see discussion infra) that requires bidders to be active in each round. PacBell estimates that a simultaneous auction of all broadband PCS licenses would take 40 to 60 rounds using their stopping and activity rules. As a fail safe mechanism, in part to address the possibility of strategic delay, it proposes that if an auction conducted using its stopping and activity rules does not close after 40 rounds, the Commission could announce that, after one additional round of bidding, the auction would close.¹⁰⁶

131. Hybrid Stopping Rules. Hybrid stopping rules are also possible. A simultaneous stopping rule, along with a relatively complex activity rule, might be used for higher value licenses where the magnitude of the benefits of simultaneous closing are great. For lower value licenses, where the loss from eliminating some back-up strategies is less, markets might be allowed to close individually. For example, in the broadband PCS context, a simultaneous stopping rule might be applied to all Major Trading Area (MTA) licenses while a simultaneous auction for Basic Trading Area (BTA) licenses might be allowed to close market by market. A more complex hybrid would be to close the largest 10 or 15 MTAs simultaneously, while closing the remaining markets on an individual basis once the top markets had closed. That is, when three rounds have passed without bids on any of the top licenses, then all licenses on which there has been no bidding would close. Each remaining market would close when bidding stops in that market. Under this approach the outcome of

¹⁰⁶ Reply comments of PacBell, Appendix to attachment by Milgrom and Wilson at 5. Professors Milgrom and Wilson propose that if this procedure is invoked the Commission would accept final bids only for licenses on which the highest bid increased in one of the last three rounds. No new bids would be accepted for other licenses.

large markets would be known before bidding closed on smaller properties. This plan would, however, prevent bidders on large MTAs from using information about small MTAs that becomes available subsequent to the close of the large markets. But, presumably information about prices and ownership of large markets is more important in making bidding decisions about small markets than vice versa. Such hybrid approaches might simplify and speed up the auction process without greatly sacrificing efficiency and revenue.

132. Preferred Stopping Rules. Based on the foregoing analysis we prefer the following stopping rules: (1) when auctioning licenses one at a time, or simultaneously and closing markets one at a time -- a market closes if a single round passes in which no new acceptable bids are submitted for that license; (2) when auctioning licenses simultaneously and closing markets simultaneously -- all markets close if a single round passes in which no new acceptable bids are submitted for any license. We favor these rules because they are simple and are likely to promote an expeditious close to auctions. We are also persuaded, for the reasons discussed above, that simultaneously closing markets for interdependent license is most likely to award licenses to the bidders who value them most highly. We recognize, however, that this approach may be more costly to implement for both the Commission and bidders, and thus may wish to adopt a hybrid approach in which markets for lower value licenses close one at a time. Moreover, we will retain the discretion to declare by announcement at any point during a multiple round auction that the auction will end after one additional round (or some other specified number of additional rounds). This will ensure ultimate Commission control over the duration of the auction. We also reserve the right to vary the interval at which bids are accepted by announcement during the course of a simultaneous auction (e.g., run two rounds per day rather than one), in order to move the auction toward closure more quickly.

5. Activity Rules

133. In order to ensure that simultaneous auctions with our preferred simultaneous stopping rule close within a reasonable period of time, an activity rule is likely to be necessary to prevent bidders from waiting until the end of the auction before participating. Because our preferred simultaneous stopping rule generally keeps all markets open as long as anyone wishes to bid, it also creates an incentive for bidders to hold back until prices approach equilibrium before making a bid and risking paying a penalty for withdrawing. As noted above, this could lead to very long auctions. An activity rule is less important when markets close one by one because failure to participate in any given round may result in losing the opportunity to bid at all if that round turns out to be the last. This Order adopts rules which retain the flexibility to decide on an auction-by-auction basis whether we will use an activity rule, and if so what type. We will announce the activity rule, if any, that will be used in each auction by Public Notice before the auction.

134. Where we decide to employ an activity rule, we will seek one that (1) moves auctions along at an appropriate speed, (2) provides bidders with the sufficient flexibility to pursue a wide range of alternative bidding strategies, and (3) is simple and clearly understood

by participating bidders. Designing an effective activity rule involves making tradeoffs among these objectives. For example, any incentive to induce bidders to actively participate (beyond a single license) in early rounds constrains the flexibility to pursue some bidding strategies (e.g., holding back). The intention is to design an activity rule which, when used in conjunction with a simultaneous stopping rule, forecloses fewer important bidding strategies than would auctions in which markets close individually.

135. Activity Rules Proposed by Milgrom and Wilson. The most detailed discussion in the record on activity rules is in the papers prepared by Professors Paul Milgrom and Robert Wilson and submitted by PacBell.¹⁰⁷ The initial Milgrom-Wilson proposal simply required each bidder to be active on at least one license in each round of bidding. In a particular round of bidding, a bidder is considered "active" with respect to a particular license if the bidder (1) has the high bid for that license from the previous round, or (2) has submitted a bid that exceeds the previous round's high bid for that license by at least the minimum bidding increment. Requiring each bidder to be active on at least one license is simple and does not foreclose any back-up bidding strategies of any serious bidder, but may not be adequate to ensure that an auction with a simultaneous stopping rule closes in a reasonable amount of time. Using this rule, we would also run the risk that it may become necessary to close an unreasonably long auction in a crude fashion, for example by announcing that only one more round of bids will be accepted. In such a case, the auction may generate little information and important bidding opportunities may be foreclosed.

136. At the cost of some added complexity and some limitation on bidding flexibility, we may wish to impose a more stringent activity rule in auctions with simultaneous closing rules. Professors Milgrom and Wilson, in their attachment to PacBell's reply comments (Milgrom and Wilson attachment at 22 and appendix at 7), suggest such a stricter activity rule. The rule encourages bidders to participate in early rounds by limiting their maximum participation to some multiple of their minimum participation level. Milgrom and Wilson propose that bidders be required to declare their maximum eligibility in terms of MHz-pops, and make an upfront payment equal to two cents per MHz-pop. (See Section IV.B., *infra*.) That is, bidders would be limited to bidding on licenses encompassing no more than the number of MHz-pops covered by their upfront payment. It is important to note that bidders would have the flexibility to shift their bids among any licenses for which they have applied so long as the total MHz-pops encompassed by those licenses does not exceed the number for which they made an upfront payment. Moreover, bidders would be able to ensure themselves the freedom to participate at whatever level they deemed appropriate by making a sufficient

¹⁰⁷ See comments of PacBell, Attachment by Milgrom and Wilson at 19; reply comments of PacBell, Attachment by Milgrom and Wilson at 21-25.

upfront payment.¹⁰⁸ To preserve their maximum eligibility, however, bidders would be required to maintain some minimum activity level during each round of the auction.

137. Under the Milgrom-Wilson proposal, the minimum activity level, measured as a fraction of the self declared maximum eligibility, would increase during the course of the auction. Milgrom and Wilson divide the auction into three stages. During the first stage of the auction, a bidder would be required to be active on licenses encompassing one-third of the MHz-pops for which it is eligible. The penalty for falling below that activity level would be a reduction in eligibility. At this stage, bidders would lose three MHz-pops in maximum eligibility for each MHz-pop below the minimum required activity level. Put another way, each bidder would retain eligibility for three times the MHz-pops for which it is an active bidder, up to the MHz-pops specified in the bidder's upfront payment. For example, if a bidder made an upfront payment on 600 million MHz-pops, the minimum activity level would be 200 million MHz-pops during the first auction stage. If it bid on only 150 million MHz-pops, its eligibility would be reduced to a total of 450 million MHz-pops.

138. In the second stage, bidders would be required to be active on two-thirds of the MHz-pops for which they are eligible. The penalty for falling below that activity level would be a loss of 1.5 MHz-pops in eligibility for each MHz-pop below the minimum required activity level. In other words, each bidder would retain eligibility for 1.5 times the MHz-pops for which it is an active bidder, up to the MHz-pops specified in the bidder's upfront payment. For example, a bidder who made an upfront payment on 600 million MHz-pops would have a minimum activity level of 400 million MHz-pops during the second stage of the auction. If it bid on only 300 million MHz-pops, its eligibility would be reduced to a total of 450 million MHz-pops.

139. In the third stage, bidders would be required to be active on licenses encompassing all of the MHz-pops for which they are eligible. The penalty for falling below that activity level would be a loss of one MHz-pop in eligibility for each MHz-pop below the minimum required activity level. Each bidder thus would retain eligibility equal to its current activity level (1 times the MHz-pops for which it is an active bidder).

140. Milgrom and Wilson propose moving from stage one to stage two when, over three rounds of bidding, the high bid has changed on five percent or fewer of the licenses (measured in terms of MHz-pops) being auctioned. Stage three would begin when the high bid has changed on two percent or fewer licenses over three rounds.¹⁰⁹ Finally, to avoid the

¹⁰⁸ The cost of buying additional initial eligibility would depend on the difference between a bidder's opportunity cost of funds and the rate of interest, if any, paid by the Commission on the upfront payments.

¹⁰⁹ To avoid the risk of an excessively long auction, they also propose that the Commission retain the ability to declare at any time during an auction that the auction is

consequences of clerical errors and to compensate for "unusual circumstances that might delay a bidder's bid preparation or submission on a particular day," Milgrom and Wilson propose that each bidder could request and automatically receive a waiver of the activity rule once every three rounds. We believe that some waiver procedure is a critical element of the Milgrom-Wilson activity rule, since the Commission would not wish to reduce a bidder's eligibility due to an accidental act or circumstances not under the bidder's control.

141. Other Activity Rules. The Milgrom-Wilson activity rule could be modified by adjusting the percentages specified in the transition rule between auction stages, changing the number of stages, adjusting the minimum required activity level during each stage, or altering the waiver procedure. For example, the first stage could be eliminated and the auction could start with the two-thirds minimum activity requirement of the second stage. Other activity rules may be possible as well. The Commission could, for example, require that a bidder's activity level remain within a single range throughout the auction. That is, a bidder's eligibility would be reduced to its current activity level only if it is active on less than some percent (e.g., 75 percent) of the MHz-pops it specified in its upfront payment. This rule would be simpler than the Milgrom-Wilson rule, but provide less bidding flexibility. Rules that would be more complex but provide greater bidding flexibility are also possible. Instead of a reduction in eligibility for bidding at less than the required activity level, the activity rule could specify a bid premium for later expanding bidding activity beyond the level that would be allowed under the Milgrom-Wilson rule. The premium could be directly proportional to the number of MHz-pops in excess of that level. Bidders would not, however, be permitted to bid on more MHz-pops than covered by their upfront payments. The waiver procedure proposed by Milgrom and Wilson could be modified as well. A simpler alternative would be to allow bidders five automatic waivers during the course of an auction (for failure to meet the minimum activity requirement) and the discretion to issue additional waivers for circumstances beyond a bidder's control, such as an earthquake.

142. Choosing Among Alternative Activity Rules. In choosing auction specific activity rules, it is important to keep in mind the tradeoffs among simplicity, flexibility, and speed of auction completion. For example, eliminating stages one and two of the Milgrom-Wilson activity rule would simplify the procedure at the expense of reduced bidding flexibility and could result in an auction that closes too quickly to allow adequate time for consideration when there are many interdependent high-value licenses. Starting an auction with the third stage of the Milgrom-Wilson activity rule would prevent a bidder from initially bidding on certain core licenses critical to its business plans and then expanding its bidding to other licenses if prices turn out to be low enough that it can do so within its budget. Instead, it would need to bid initially on the largest collection of licenses it might want. If prices turn out to be higher than expected, the bidder would need to scale back, but it might get stuck with the wrong properties. That is, it might find that it risks being outbid on its core properties but not on the less essential ones. It would then need to withdraw its high bids on

moving to the next stage.

its non-essential properties in order to have sufficient capital to ensure that it could pay for its core properties. This problem would be less likely to occur under the three stage activity rule proposed by Milgrom and Wilson, because the bidder would not need to commit itself to the additional properties until stages two or three, when price information would be relatively reliable.

143. We are concerned, however, about the possible complexity of a three stage Milgrom-Wilson activity rule. One way to reduce this complexity from the perspective of bidders, without sacrificing auction flexibility or speed, would be to develop appropriate bidding software. It is our intention to develop such software and make it available to all bidders in auctions in which a Milgrom-Wilson type activity rule is used. Such software which would (1) automatically calculate the activity level associated with any possible bid on a license or licenses, (2) show the minimum required activity level for the current auction stage, (3) automatically alert the bidder, prior to submitting a bid, if a bid falls below the bidder's minimum activity level, and show the consequences in terms of future eligibility of submitting such a bid, (4) show the bidder's eligibility in terms of MHz-pops, (5) automatically inform the bidder, prior to bid submission, as to whether a bid is valid, and (6) show the number of automatic waivers the bidder has used and the number still available.

144. Preferred Activity Rule. In light of the foregoing analysis, when the Commission employs a simultaneous stopping rule, its preferred activity rule will be a three stage Milgrom-Wilson rule. The specific parameters of the rule, including the minimum required participation level during each stage and the overall activity level specified in the transition rule between auction stages will be determined in subsequent service specific Reports and Orders.¹¹⁰ However, the Commission retains the flexibility to choose among the following other activity rules on a case-by-case basis: (1) a Milgrom-Wilson rule with one or two stages, (2) the requirement that bidders be active on a single license, (3) a rule, as described above, that a bidder's activity level remain within a single range throughout the auction, (4) a rule, as described above, that replaces the maximum allowed bidding levels in the Milgrom-Wilson rule with a bidding premium for exceeding those maximums, or (5) a combination of the foregoing rules.

145. We also conclude that while some waiver procedure is necessary in conjunction with a Milgrom-Wilson activity rule, a rule less complex than the one they proposed is likely to be adequate. Our preferred procedure will be to allow bidders five automatic waivers during the course of an auction (for failure to meet the minimum activity requirement) and the discretion to issue additional waivers for circumstances beyond a bidder's control. We retain the flexibility, however, to adjust the number of automatic waivers, or to institute a rule that allows one free waiver during a specified number of bidding rounds.

¹¹⁰ The Commission would also retain the ability to speed up an auction by announcing, at any time during an auction, that the next stage of the auction (with a higher minimum participation level) will begin in the next bidding round.

6. Bid Withdrawal and Default

146. In either sequential or simultaneous auction designs, a bidder may wish to withdraw one or more of its high bids. As discussed below, if a high bid is withdrawn prior to the close of a simultaneous multiple round auction, the Commission will impose a penalty equal to the difference between the withdrawn bid and the amount of the winning bid the next time the license is offered by the Commission.¹¹¹ No withdrawal penalty will be assessed if the subsequent winning bid exceeds the withdrawn bid. If a winning bidder defaults after the close of such an auction, the defaulting bidder will be required to pay the foregoing penalty plus an additional penalty discussed below.

147. Bid Withdrawal Penalty. Allowing bidders to withdraw bids without ever paying a penalty would encourage insincere bidding. Insincere bidding, whether purely frivolous or strategic, distorts the price information generated by the auction process and reduces its efficiency. Strategic bidding is likely to be the most damaging. For example, a strategic bidder might attempt to deter a rival from acquiring a regional collection of licenses (or from entering altogether) by bidding up the price of key licenses and then withdrawing.

148. An excessive bid withdrawal penalty, on the other hand, would tend to discourage the efficient aggregation of licenses. Absent full combinatorial bidding, bidders attempting to put together a collection of licenses face the risk that they may be left holding licenses they no longer want. In either sequential or simultaneous auctions, a bidder may bid high on one property in the expectation that it will also win a complementary property, only to find that it is outbid on the complementary property. If the penalty for bid withdrawal is too high, bidders will tend to be too cautious in attempting to aggregate licenses.

149. A point to note in considering the appropriate level of bid withdrawal penalty is that the existence of an after-market generally places an upper limit on the amount that bidders will pay to the government for bid withdrawal. If the bid withdrawal penalty is set too high, winning bidders who realize that they bid too much will generally pay for the license and resell it in the after-market. The cost of doing this would be the difference between the bid price and the price obtained in the after-market plus any transaction costs (including the cost of financing the initial purchase). Only those bidders who cannot raise sufficient capital to acquire the license for later resale, or those who are disqualified from

¹¹¹ If a license is re-offered by auction, the "winning bid" refers to the high bid in the auction in which the license is re-offered. If a license which is the subject of withdrawal or default is instead offered to the highest losing bidders in the initial auction, the "winning bid" refers to the bid of the highest bidder who accepts the offer. Losing bidders would not be required to accept the offer, i.e., they may decline without penalty. We wish to encourage losing bidders in simultaneous multiple round auctions to bid on other licenses, and therefore will not hold them to their losing bids on a license for which a bidder has withdrawn a bid or on which a bidder has defaulted.

acquiring the license would choose to withdraw and pay the government significantly more than this.¹¹²

150. Professor R. Preston McAfee, in a January 10, 1994, ex parte filing on behalf of PacTel, proposes a bid withdrawal penalty, in the context of simultaneous multiple round auctions, which we believe generally provides an appropriate balance between the risks of too high a penalty and those of too low a penalty. He proposes that the penalty for withdrawing a high bid equal the difference between the amount bid and the amount the government ultimately receives for the license. If the amount ultimately received for the license is greater than the amount of the withdrawn bid, no payment would be required.¹¹³

151. We believe, for the following three reasons, that this is an appropriate penalty where the high bid is withdrawn during the course of a simultaneous multiple round auction.¹¹⁴ First, it provides bidders with appropriate incentives to avoid withdrawing bids. It compels bidders who may ultimately withdraw to consider the external consequences of both how much they bid and the timing of their withdrawal. The more the price is bid up above the final sales price the greater the distortion in information generated by the auction, and the greater the potential for strategically limiting entry of potential competitors. Thus it is appropriate that the bid withdrawal penalty should increase with the amount of the withdrawn

¹¹² In determining the maximum amount that could be charged for a bid withdrawal penalty one must take into account the fact that the price at which a license can be transferred in the after-market is uncertain. Risk averse bidders would be willing to pay a fixed withdrawal penalty which exceeds the expected value of the difference between the bid and final sales price plus transaction costs.

¹¹³ McAfee also proposes that the license reverts to the second highest bidder, who may withdraw without penalty. Alternatively, the Commission could restart bidding at some fraction of the withdrawn bid, say 80 percent, or at a fraction of the second highest bid. We generally favor the last approach. Using a fraction of the second highest bid instead of a fraction of the withdrawn bid would avoid the problem of setting the starting price too high in the event that there is a large gap between the highest and second highest bids. It would also take into account the possibility that the second highest bidder is no longer willing to pay as much as it originally bid. Finally, this approach would be administratively less burdensome than checking whether the second highest bidder wanted the license. If no bids are received at the suggested starting price the Commission would retain the right either to lower the price or to accept bids that are below the price.

¹¹⁴ In the unlikely event that there is more than one withdrawal on the same license, we will hold each withdrawing bidder responsible only for the difference between its withdrawn bid and the amount of the winning bid the next time the license is offered by the Commission. This procedure ensures that each bidder who withdraws is responsible for its bid. In our view, §§ 309(j)(3) and (4)(B) afford us ample authority to impose such penalties for bid withdrawal.

bid, when that amount exceeds the market price. Similarly, the later in the auction a high bid is withdrawn, the higher the penalty should be and the higher it is likely to be. The damage to the auction process is greater when bids are withdrawn late in the process because other bidders have fewer opportunities to adjust their strategies and thus there is less the chance the license will be awarded to the bidder who values it most highly. For the same reason, the ultimate sales price is likely to be less, and hence the bid withdrawal penalty likely to be higher. The penalty compels bidders to consider the costs imposed on the auction process along with the benefits they expect to receive from withdrawal.

152. Second, the penalty precisely protects the government from loss of revenue associated with bid withdrawal. A fixed withdrawal penalty would be too great when the gap between the final sales price and bid price is small and too little when it is large.

153. Third, the bid withdrawal penalty adopted here is likely to be fairer to designated entities, who are less likely to have the option of purchasing a license and reselling it as an alternative to bid withdrawal. As discussed above, most bidders would not pay a fixed bid withdrawal penalty if it would be less costly to purchase the license and resell it in the after-market. But capital constrained firms, and firms subject to strict resale limitations would not have this option. In contrast to a fixed bid withdrawal penalty, the penalty adopted here would result in equal treatment for all firms, since the penalty for bid withdrawal would approximate the loss incurred by accepting a license and then reselling it.

154. Default Penalty. If a bid is withdrawn after a simultaneous multiple round auction has closed, i.e., the winning bidder "defaults," the winning bidder will be required to pay the foregoing penalty plus an additional penalty equal to three (3) percent of the amount of the winning bid the next time the license is offered by the Commission, or three percent of the amount of the defaulting bidder's bid, whichever is less. The additional penalty is intended to provide an incentive for bidders wishing to withdraw their bids to do so prior to the close of the auction. It is appropriate to create such an incentive because a withdrawal that occurs after an auction closes (default) is likely to be more harmful than one that occurs before closing. First, default reduces the efficiency of the assignment process. If withdrawal occurs before the auction closes other bidders will have greater opportunities to revise their bidding strategies to account for the availability of the withdrawn license. Once the auction closes, however, only those licenses on which bidders defaulted (plus any licenses not sold during the auction) will be put up for re-auction, so other bidders will have little opportunity to revise their strategies. Thus, default would reduce the likelihood that licenses will be assigned to those who value them the most. Second, default imposes extra costs on the government. If a bidder defaults, the government must generally incur the additional expense

of re-auctioning the license.¹¹⁵ In contrast, the administrative cost of announcing a bid withdrawal prior to the close of an auction and accepting additional bids would be minimal.

155. In setting the additional penalty for default, the Commission must take into account the presence of the after-market as a limitation on the maximum collectable penalty. Based on the fact that brokers of cellular licenses typically charge a three percent commission (See Notice of Proposed Rulemaking and Tentative Decision in GN Docket No. 90-314 and ET Docket No. 92-100, 7 FCC Rcd 5676 (1992), at n. 41), we estimate the after-market transaction costs to be approximately three percent. We believe that this is an appropriate additional penalty for default. If the Commission were to charge this additional penalty, we would expect most bidders to prefer paying the default penalty than purchasing and reselling the licenses in the after-market, because the Commission is likely to be able to re-auction licenses more quickly and to get higher sales prices assuming it puts all defaulted (and otherwise unsold) licenses up for bid shortly after the auction closes. If the Commission were to set a substantially higher penalty, few bidders would default but would instead resell unwanted licenses in the after-market. Not only would this be unfair to entities unable to rely on the after-market, it would likely reduce the efficiency of the auction process, because we anticipate that FCC simultaneous auctions of defaulted (and otherwise unsold) licenses will generally assign licenses more efficiently than license-by-license transactions in the after-market. On the other hand, an additional penalty of substantially less than three percent would not sufficiently discourage default.

156. Penalties in Open Outcry Auctions. In the case of open outcry auctions, the Commission may choose not to impose any penalty for bid withdrawal during the course of an auction and instead rely only on the default penalty described above to discourage insincere bidding. The default penalty will be assessed if a bidder fails to make the down payment on a license, fails to pay for a license or is disqualified after the close of an auction. There are two reasons for this possible modification. First, the damage from bid withdrawal is less when only one license is up for auction at a time than when multiple licenses are auctioned simultaneously. In a simultaneous auction, bids on one license will affect other bidders' decisions about other licenses. In an open outcry auction, however, bids during the course of the auction will have little or no effect on other decisions. Provided that other

¹¹⁵ In the event that a winning bidder in a simultaneous multiple round auction defaults on its down payment obligations, the Commission will generally re-auction the license either to existing or new applicants. If, however, only a small number of relatively low value licenses are to be re-auctioned, the Commission may choose to offer the license to the highest losing bidders (in descending order of their bids) at their final bids, since the cost of running an auction may not exceed the benefits. If a high bidder defaults or is disqualified after having made its down payment, the Commission will conduct another auction for the license. New applicants will be given the opportunity to participate in such an auction, because so much time is likely to have passed that different parties may be interested in bidding and existing applicants may have different valuations of the license.

bidders are also not held to their bids (so they are not committed to bids based on faulty estimates of common values inferred from the withdrawn bid), the only damage from such withdrawal would be delay. In an open outcry auction such delay may be minimal. Second, in open outcry auctions the possibility for mistaken bids is greater than when bids are submitted electronically or in writing.

157. Penalties in Single Round Bidding. In the case of single round bidding, the foregoing analysis of penalties for withdrawal and default must be modified to reflect the fact that bids cannot be withdrawn during the course of an auction because there is only a single round. If a bid is withdrawn before the bids are opened no harm would be done and no penalty will be assessed. If a high bid is withdrawn after the bids are opened but before the high bidder has been notified the harm would also be minimal. The Commission can quickly proceed to offer the license to the party with the next highest bid and the situation would be as if the first high bid had not been made. If, however, a high bidder in a single round auction defaults after it has been notified, the licensing process is likely to be delayed. To provide bidders in single round auctions an incentive to avoid default and the associated delays, and to protect the government against the revenue loss from default, we intend to impose a default penalty equal to the difference between the high bid and the next highest bid.¹¹⁶ No additional three percent penalty will be charged because the two justifications for its imposition in multiple round auctions do not apply. In a single round auction, the argument about creating an incentive to withdraw during the course of an auction does not apply since there would be only a single bidding round and the Commission would not incur additional costs because it will not generally need to run another auction.

7. Releasing Bid Information

158. In multiple round auctions the Commission must decide how much bid information to release during the auction. One option (proposed by PacBell) would be to announce all bids plus the identities of the high bidder in each round.¹¹⁷ Maximizing the information available to bidders minimizes bidder uncertainty and thus may increase bids by alleviating the winner's curse. It may also increase efficiency of license assignments by providing bidders with useful information about the likely availability of complementary

¹¹⁶ If there are multiple defaults each bidder would be responsible for the difference between its bid and the next highest bid. Holding each bidder in a single round auction responsible for the difference between its bid and the next highest bid would discourage cascading defaults. Moreover, the argument made above (for the case of simultaneous multiple round auctions) that losing bidders should not be held to their bids does not apply here because single round bidding does not provide losing bidders with the opportunity to switch bidding strategies within the auction.

¹¹⁷ Comments of PacBell, Attachment by Milgrom and Wilson at 19. See also reply comments of PacBell, Attachment by Milgrom and Wilson at 26.

services and standards both inside and outside the areas they wish to serve. On the other hand, releasing the identities of the high bidders may foster strategic manipulation, e.g., bidding up licenses critical to rivals' business plans.¹¹⁸ It also facilitates collusion among bidders by identifying high bidders to each other and enables parties to enter into bid rigging agreements. We believe that the risk of collusion and strategic manipulation outweighs the benefits of additional information from releasing the identities of the high bidders. We therefore will adopt an intermediate option of announcing bidder identification numbers and bid amounts but not the identities of the bidders. This option provides some useful information to bidders without significantly increasing the risk of anticompetitive behavior.

8. Delay, Suspension or Cancellation of Auction

159. By Public Notice or by announcement during an auction, the Commission may delay, suspend or cancel an auction in the event of a natural disaster, technical obstacle, evidence of auction security breach, unlawful bidding activity, administrative necessity, or for any other reason that affects the fair and competitive conduct of the competitive bidding. In such cases, the Commission may, at its sole discretion, resume the auction starting from the beginning of the current or some previous round or may cancel the auction in its entirety.

IV. PROCEDURAL, PAYMENT AND PENALTY ISSUES

160. This section establishes general rules and procedures that will govern the competitive bidding process, including procedures for the filing of applications and rules concerning bidder and licensee qualifications, upfront and down payments, penalties that will be assessed in certain circumstances, and the use of minimum bid and reservation prices. These rules are structured to ensure that bidders and licensees are qualified and will be able to construct systems quickly and offer service to the public. By ensuring that bidders and license winners are serious, qualified applicants, these rules will minimize the need to re-auction licenses and prevent delays in the provision of service to the public.

A. Pre-Auction Procedures and Bidder and Licensee Qualifications

161. Section 309(j)(5) provides that no party may participate in an auction "unless such bidder submits such information and assurances as the Commission may require to demonstrate that such bidder's application is acceptable for filing." 47 U.S.C. § 309(j)(5). Moreover, "[n]o license shall be granted to an applicant selected pursuant to this subsection unless the Commission determines that the applicant is qualified pursuant to [Section 309(a)] and Sections 308(b) and 310" of the Communications Act. *Id.* As we noted in the NPRM, the legislative history explains that the Commission may require that bidders' applications contain all information and documentation sufficient to demonstrate that the application is not

¹¹⁸ See comments of NYNEX, Attachment by Harris and Katz at 9.

in violation of Commission rules and that applications not meeting those requirements may be dismissed prior to the competitive bidding. See NPRM at ¶ 96, citing H.R. Rep. No. 103-111 at 258.

162. In the NPRM, we made a number of proposals to implement this statutory provision that were designed to streamline the processing of auction applications. NPRM at ¶¶ 96-101. We proposed that, in response to a Commission Public Notice of a filing window or cut-off date in services that are subject to competitive bidding, all applicants interested in participating would be required to file a short-form application (modeled on the Commission's "Transmittal Sheet for Cellular Applications"). Id. at ¶ 97. Submission of a short-form application prior to the auction, we noted, would reduce the administrative burdens of the initial stages of the auction process, avoid unnecessary delay in the initiation of service, and encourage applicants to participate in the process. We asked whether applicants should also be required to submit a long-form application and an application fee prior to the auction, or whether the long-form application should be submitted subsequent to the auction. Id.

163. The comments generally support the Notice's proposals to streamline the processing of auction applications, particularly as they would apply to PCS applications.¹¹⁹ The majority of commenters addressing this issue agree that we should require only a short-

¹¹⁹ See, e.g., comments of Cellular Service, Inc. at 15; GCI at 14; Liberty Cellular at 5; and Pacific Telecom Cellular, Inc. at 5-6. The Association for Independent Designated Entities (AIDE) argues in its comments and again in its reply comments that we have not afforded sufficient notice in the NPRM to permit us to promulgate rules for the auction of PCS. We disagree. The NPRM was sufficiently specific to draw numerous and extensive comments from interested parties on the proposed procedures. See, e.g., NPRM at ¶¶ 120-130, 167-175. The Commission proposed to base its PCS application filing and processing rules on existing rules used for the processing of other mobile radio services, such as the cellular radio service and the private land mobile radio services, and proposed the use of a one-day filing window for PCS applications. We made reference to specific rules in the cellular service and in the private land mobile radio service. We proposed use of both a short-form and a long-form application to speed processing, and asked when we should consider petitions to deny. We further asked whether we should use combinatorial bidding, proposed to auction the biggest markets first in both broadband and narrowband PCS, and proposed a specific upfront payment in dollars for nationwide narrowband PCS. We proposed that no modifications be allowed until after a winning bidder emerged, and proposed which forms applicants should use to apply for PCS licenses. Finally, we proposed the application fees we proposed to charge and advanced numerous other proposals as well. We received voluminous comments from many parties on these issues. In view of the extensive and detailed comments we received on all aspects of our proposal, we disagree with AIDE's conclusion that we must issue a further notice of proposed rule making before adopting specific procedural rules for PCS. We shall announce those rules in a subsequent Report and Order in this proceeding.

form application prior to competitive bidding, and that only winning bidders should be required to submit a long-form license application after the auction.

164. Generally, we intend to adopt the following procedures for conducting auctions.¹²⁰ Usually, no less than 75 days before each scheduled auction the Commission will release a Public Notice announcing the auction. This Public Notice may be issued either by Commission order or Bureau release. The initial Public Notice will normally contain the following information: the license(s) to be auctioned and the time, place and method of competitive bidding to be used, including applicable bid submission procedures, bid withdrawal procedures and penalties, stopping rules and activity rules. This Public Notice will also specify the filing window, if any, for short-form applications and bidder certifications, as well as the amounts and deadlines for submitting the applicable filing fee, upfront payment and down payment. We will not accept applications filed before or after the dates specified in Public Notices.¹²¹ Applications submitted before release of a Public Notice announcing an auction for particular license(s), or before the opening date of the filing window specified therein, will be returned as premature. Applications submitted after the deadline specified by Public Notice will be dismissed, with prejudice, as untimely. Soon after release of the initial Public Notice, an auction information package would be made available to prospective bidders.

165. In order to reduce the administrative burdens on bidders and the FCC and minimize the potential for delay, bidders will be required to submit only short-form applications and bidder certifications together with any applicable filing fee¹²² prior to the auction.¹²³ As indicated above, short-form applications will be due on a date to be specified by Public Notice or Commission rule. If the Commission receives only one application that is acceptable for filing for a particular license, mutual exclusivity would be lacking and the Commission would be prohibited from using competitive bidding to award the license. Under

¹²⁰ We may decide in the future to alter some or all of the procedures detailed herein, or to tailor them to specific service rules, after we have had an opportunity to assess their effectiveness.

¹²¹ We may decide in some services to accept applications before scheduling an auction. This will be the case in services where mutually exclusive applications are filed during filing windows that open automatically by operation of our Rules. In these situations, we will provide through a subsequent Public Notice relevant information concerning the auction in which these licenses will be awarded.

¹²² This fee would be based on the applicable processing fee for the service in question. See 47 U.S.C. § 158(g); 47 C.F.R. Part 1, Subpart G. Whenever funds are remitted to the Commission, applicants must file FCC Form 159.

¹²³ Applicants should submit one paper original and one microfiche original of their application, as well as two microfiche copies.

these circumstances, the Commission will issue a Public Notice cancelling the auction for this license and establishing a date for the filing of a long-form application, the acceptance of which would trigger the relevant procedures permitting petitions to deny.

166. The short-form applications and bidder certification forms will normally require applicants to provide the following information: 1) the license(s) for which the applicant wishes to bid;¹²⁴ 2) the applicant's name;¹²⁵ 3) the identity of the person(s) authorized to make or withdraw a bid; 4) certifications that the applicant is legally, technically, financially and otherwise qualified pursuant to Section 308(b) of the Communications Act, and is in compliance with the foreign ownership provisions contained in Section 310 of the Communications Act and any other service-specific qualification rules applicable to the particular service; and 5) certification that the applicant satisfies any financial qualifications requirements for the service in question. If the applicant seeks to take advantage of any special provisions adopted for designated entities (see Section VI, infra), the short-form application would also contain a statement to that effect and a declaration under penalty of perjury that the applicant is qualified as a designated entity under the Commission's eligibility rules. For the reasons discussed in Section V, infra, the bidder certification will also require bidders to identify all parties with whom they have entered into partnerships, joint ventures, consortium or other agreements, arrangements or understandings of any kind which relate to the licenses being auctioned, including any such agreements relating to the post-auction market structure. In addition, as discussed more fully below, bidders will be required to certify that they have not entered into any agreements, arrangements or understandings of any kind with other bidders (who are not members of identified partnerships, joint ventures or other bidding consortia) regarding the amount of their bid, bidding strategies or the particular licenses on which they will or will not bid. We may also ask applicants to submit additional information purely for informational purposes so that we can compile the report to Congress required by section 309(j)(12)(D)(iv).

167. In the NPRM, we tentatively concluded that short-form applications should be judged by a letter-perfect standard. See NPRM at ¶ 100. Several commenters, however, opposed subjecting short-form applications to a letter perfect standard of review, and proposed that the Commission allow a brief period for correcting errors in short-form applications.

¹²⁴ Several commenters suggested that we consider a "consolidated" short form -- one form that could be used for bidding on multiple licenses. We are currently assessing the feasibility of this option.

¹²⁵ If the applicant is a corporation, then the short-form application will require the name and address of the corporate office and the name and title of an officer or director. If the applicant is a partnership, then the application will require the name, citizenship and address of all partners, and, if a partner is not a natural person, then the name and title of a responsible person should be included as well. If the applicant is a trust, then the name and address of the trustee will be required.

See, e.g., comments of AT&T at 30-31, BellSouth at 36-37. But cf. comments of Comcast at 16, n. 25. We now believe, as a general matter, that the public interest would be better served by encouraging maximum bidder participation in auctions. Therefore, we have decided to adopt a more liberal standard in most cases.¹²⁶ Applicants whose short-form applications are substantially complete, but contain minor errors or defects, will be provided an opportunity to correct their applications prior to the auction.¹²⁷ However, applicants will not be permitted to make any major modifications to their applications, including ownership changes or changes in the identification of parties to bidding consortia. In addition, applications that are not signed or that fail to make the requisite certifications will be dismissed as unacceptable.

168. After reviewing the short-form applications, the Commission will issue a second Public Notice listing all defective applications and notify applicants of the specific defect. Applicants will be given an opportunity to cure defective applications and resubmit a corrected version.¹²⁸ After reviewing the corrected applications, the Commission will release a third Public Notice announcing the names of all applicants whose applications have been accepted for filing. Applicants identified in this Public Notice will then be required to submit the full amount of their upfront payment¹²⁹ to the Commission's lock-box bank by a date certain, which generally will be no later than 14 days before the scheduled auction. After the Commission receives from its lock-box bank the names of all applicants who have submitted timely upfront payments, the Commission will issue a fourth Public Notice announcing the names of all applicants that have been determined to be qualified to bid.¹³⁰ Each applicant listed on this fourth Public Notice will be issued a bidder identification number and further information and instructions regarding the auction procedures. During an auction, bidders will be required to provide their bidder identification numbers when submitting bids.

¹²⁶ We may, however, on a service-specific basis decide to employ a letter-perfect standard in appropriate circumstances; any such decision would be noted in the service-specific rules.

¹²⁷ The general rules governing submission of fees would, however, apply. See 47 C.F.R. § 1.1101 *et seq.* These rules currently provide for dismissal of an application if the application fee is not paid, is insufficient, is in improper form, is returned for insufficient funds or is otherwise not in compliance with our fee rules.

¹²⁸ On the date set for submission of corrected applications, applicants that on their own discover minor errors in their applications (e.g., typographical errors, incorrect license designations, etc.) also will be permitted to file corrected applications.

¹²⁹ See subsection B, *infra*.

¹³⁰ An applicant who fails to submit a sufficient upfront payment to qualify it to bid on any license being auctioned will not be identified on this Public Notice as a qualified bidder.

B. Upfront Payment

169. To ensure that only serious, qualified bidders participate in our auctions, we proposed that all participants in any auction tender in advance to the Commission a substantial sum (an "upfront payment") as a condition of bidding. NPRM at ¶ 102. We proposed that the upfront payment be set using a formula based on the amount of spectrum and population (or "pops") covered by the license or licenses for which parties intend to bid. *Id.* at ¶ 103. We proposed to set the upfront payment at \$0.02 per pop per megahertz. *Id.* We reasoned that an upfront payment requirement would ensure the validity of the information generated during auctions and increase the likelihood that licenses are awarded to the qualified bidders who value them the most, thus promoting the rapid deployment of new technology.

170. There is substantial support in the comments for the Commission's proposal to require prospective bidders to make substantial upfront payments prior to auction. *See, e.g.,* comments of Comcast at 18, PacBell at 28, Nextel at 16, and AWCC at 31-32. Though some favor a fixed upfront payment set by the Commission prior to the auction (*see, e.g.,* comments of Edward M. Johnson at 2, and LuxCel Group, Inc. at 8), most support the Commission's proposed \$0.02 per pop per MHz formula, which would enable prospective bidders to tailor their upfront payment to their bidding strategies (*see, e.g.,* comments of PacBell at 28, Telocator (now PCIA) at 13, CTIA at 30, and Rochester Telephone Corporation at 13). Commenters suggest that there should be some fixed minimum on the amount of upfront payment made prior to auction (suggestions range from \$2,500 to \$100,000 for different services). *See, e.g.,* comments of Telocator at 20-21, Cellular Communications, Inc. at 15, AT&T at 34, and BellSouth at 41. Some commenters also favor setting a maximum upfront payment, pointing out that our proposed formula yields very high payments in the broadband PCS context. *See, e.g.,* comments of Southwestern Bell at 38-40 (arguing generally for a maximum deposit of \$50 million for all markets), and AT&T at 34 (supporting a maximum upfront payment of \$5 million, with a down payment following the auction).

171. We conclude that, in most cases, some form of upfront payment is necessary to deter frivolous or insincere bidding. In determining the amount of upfront payment required, we are balancing the goal of encouraging bidders to submit serious, qualified bids with the desire to simplify the bidding process and minimize implementation costs that will be imposed on bidders. This balancing may yield different results depending on the particular licenses being auctioned, so we have determined that the best approach is to retain the flexibility to determine the amount of upfront payment on an auction-by-auction basis. In this way, we will be able to tailor the upfront payment requirement to the auction design we select and to the characteristics of the licenses being auctioned.¹³¹

¹³¹ One commenter, Devsha Corporation, questions the Commission's authority to require upfront payments at all. Comments of Devsha Corporation at 4. However, Devsha provides no serious analysis, legal or otherwise, to support its assertion that the upfront payment requirement may overstep the Commission's statutory authority. Devsha states only that the

172. As a general rule, however, we will use the formula proposed in the Notice for determining upfront payments: a bidder must submit an upfront payment equal to \$0.02 per pop per MHz for the largest combination of MHz-pops the bidder anticipates bidding on in any single round of bidding.¹³² Thus, the upfront payment may vary by bidder and will reflect the capabilities of each bidder. We believe that this approach will, in most circumstances, best achieve the Commission's goals in requiring an upfront payment while burdening bidders the least. By the time the upfront payment is due, bidders already will have applied for the licenses on which they may wish to bid, and should know approximately the population they ultimately wish to serve. The upfront payment will define the upper bound of MHz-pops on which a bidder will be permitted to bid in any round, and so should be calculated by bidders to reflect the maximum MHz-pops from any combination of licenses on which they may want to bid in a single round.¹³³ This formula links upfront payment requirements to the total number of MHz-pops bidders plan to bid on and potentially to win, and relates closely to the Milgrom-Wilson activity rule we described above.¹³⁴

173. Using this formula, bidders will be limited in an auction to bidding on licenses encompassing only the number of pops and MHz that their upfront payment covers. However, it provides a bidder with the flexibility to change its strategy during the auction and to bid on a larger number of smaller licenses or a smaller number of larger licenses, so long as the total MHz-pops combination does not exceed that reflected in the upfront payment.

Commission's justification for such a payment "appears to be premised on revenue maximization, a prohibited concern." *Id.* To the contrary, as we clearly stated in the Notice, the upfront payment requirement was proposed "[t]o ensure that only serious, qualified bidders participate in our auctions." NPRM at ¶ 102. We take this opportunity to reiterate that we will adopt upfront payment rules because we believe they will provide the necessary "assurances" required by Section 309(j)(5) and deter frivolous and insincere bidding by discouraging speculators who may otherwise be tempted to "game" our competitive bidding process. Upfront payments also give force to the bid withdrawal penalty, which also is designed to bolster the integrity of our process.

¹³² As discussed *infra*, however, we retain the flexibility to consider using a simpler payment requirement when circumstances warrant.

¹³³ For example, an entity that is interested in bidding on several 30 MHz PCS licenses with a goal of providing service to a population of at most 50 million should make an upfront payment of \$30 million ($\$0.02 \times 30 \text{ MHz} \times 50,000,000$). That bidder will not be permitted to bid (at any time) in the auction, or be permitted to win, 30 MHz licenses covering more than 50 million pops.

¹³⁴ Using the \$0.02 per pop per MHz formula is most appropriate when a Milgrom-Wilson type activity rule is employed. A preset fixed upfront payment would do little to simplify the auction process for bidders in that circumstance because the activity rule requires bidders to know the number of MHz-pops that correspond to their bids.

Under the formula, bidders will also avoid having to submit an upfront payment for each license on which they potentially might bid. For example, a bidder wishing to be awarded a 30 MHz broadband PCS license in the Chicago MTA would be required to submit an upfront payment equal to the Chicago MTA population of 8.2 million times 30 MHz times \$0.02, or \$4.9 million. This would allow such a bidder to bid on either the A or B block license (assuming these licenses are sold at the same auction). If both of these licenses are found to be too expensive, the bidder could alter its strategy and bid on the A or B block licenses in smaller MTAs whose total population is less than or equal to 8.2 million (assuming it has filed applications for these licenses).

174. A bidder may file applications for every license being auctioned, but its actual bidding in any round of an auction will be limited by the amount of its upfront payment. Thus, if licenses covering the nation in a particular service are being auctioned simultaneously, a bidder would not be required to file an upfront payment representing national coverage unless it intends to bid on or hold licenses covering the entire nation.¹³⁵ Under this system of upfront payments, bidders will retain greater flexibility and be able to more easily effectuate alternative bidding strategies. We will announce the population covered by each license (which will be based on census figures for the licensed service areas) for the purpose of computing the upfront payment in a Public Notice issued prior to the auction, and bidders will be able to calculate the necessary upfront payment for each license on which they wish to bid at any one time.

175. We believe that using a formula that bases the size of the upfront payment on the amount of spectrum and population on which a bidder is interested in bidding at any one time is a rational way for the Commission to be provided assurance that each bidder is a bona fide applicant and that each bid is sincere. The size of the upfront payment will thus directly relate to the size and capabilities of the licensed facilities, the cost to construct a system, the value of the licensed spectrum and the potential amounts bidders will bid.

176. Upfront payments will also provide the Commission with a source of available funds in the event a penalty must be assessed for bid withdrawal prior to further payments. As discussed in Section III.F. above, we have concluded that the appropriate basic penalty for bid withdrawal is to require that the withdrawing bidder make up any difference between the withdrawn bid and the amount of the winning bid the next time the license is offered by the Commission. (If the high bid is withdrawn after the auction closes, an additional penalty will be assessed.) For such a penalty to ensure sincere bidding, however, it must be collectable; and the proposed upfront payment is one means to this end.

¹³⁵ For example, if we were to hold an auction of all broadband PCS licenses simultaneously, a bidder who wishes to be licensed only over some regional area (but who is indifferent as to which region) may retain flexibility in bidding by filing applications for licenses throughout the country but remitting an upfront payment reflecting only the maximum number of MHz-pops it ultimately wishes to serve.

177. Our preferred formula for calculating the upfront payment is rationally related to the bid withdrawal penalty. In its September 1993 Mid-Session Review of the 1994 Budget, the Office of Management and Budget estimated that spectrum auctions would generate \$12.6 billion from 1994 through 1998. A 1992 report by the Congressional Budget Office assumed that \$2 billion would be raised from competitive bidding in services other than PCS. Thus, the approximate value of 120 MHz of PCS spectrum is placed at \$10.6 billion, or 35 cents per pop per MHz. Our \$0.02 per pop per MHz formula would yield a deposit for such a license that would equal just under six percent of the estimated value of a winning bid. It is reasonable to assume that if a high bidder withdraws its bid, another bidder would be willing to pay approximately the second highest bid amount. We expect bid increments to be around five percent, so an upfront payment calculated by this formula should insure the Commission against non-payment of the bid withdrawal penalty.

178. In future Reports and Orders establishing service-specific auction rules, we may determine that the \$0.02 per pop per MHz formula is inappropriate because of product market or license characteristics or auction design choice. In some circumstances, we may decide that it is more appropriate instead to set a fixed upfront payment or to eliminate the upfront payment entirely. For example, where we award licenses using a sequential oral-outcry auction design, we may simply require that bidders bring to the auction an upfront payment in a specified amount for each license that they wish to be awarded. Bidders desiring more than one license would be required to bring a multiple of the specified sum and once a bidder had won the number of licenses that corresponded to its upfront payment, it would be precluded from further bidding. Indeed, where single sealed bids are employed, upfront payments may be unnecessary.¹³⁶ We therefore reserve the option of revising or waiving the upfront payment in appropriate circumstances.¹³⁷ In such cases, we will adopt an alternative upfront payment in service-specific auction rules or in the Public Notice announcing the auction.

179. As a general rule, we will not cap upfront payments because we need to ensure that those bidding on large numbers of licenses have the financial capability to build out those

¹³⁶ In single round sealed bid auctions, the need for upfront payments may be less because there would appear to be little incentive for bidders to engage in frivolous bidding. If a high bidder fails to tender its down payment within the time period allowed, the Commission could simply offer the award to the next highest bidder and impose the basic bid withdrawal penalty on the withdrawing bidder. On the other hand, a series of withdrawals could slow down the process of assigning licenses, and bid withdrawal penalties may not be an adequate deterrent without an upfront payment to ensure they are collectable.

¹³⁷ With respect to certain licenses that the Commission may set aside for designated entities (see Section VI, *infra*), we may decide that the upfront payment required of applicants should be capped, reduced or set according to a different formula. Any such decision would be made in a Report and Order adopting competitive bidding rules applicable to the specific service.

licenses and are bidding in good faith. While the upfront payments for broadband PCS licenses could add up to millions of dollars, it would not be unreasonable to expect prospective bidders to tender such sums given the expected overall value of some of these licenses and the expected financial requirements to construct the systems. However, we reserve the right to institute caps in specific services if we are satisfied that an absolute dollar amount will provide sufficient deterrence against frivolous bidding and pernicious strategic bidding.¹³⁸ Whether or not we adhere to our preset formula or institute a cap, it is critical that we ensure that those bidding on large numbers of valuable broadband PCS licenses are financially capable of constructing those systems quickly, lest the potential of these services to stimulate economic growth and provide new services be stymied.

180. As many commenters suggested, we believe that setting a minimum upfront payment may be appropriate when use of our preferred formula would result in a payment that would be too small. For some narrowband licenses in sparsely populated areas, for example, the formula could yield a very small upfront payment. Even in a market with a population of one million, for some narrowband licenses, the upfront payment could be as low as \$200. We believe that, in most cases, such a low amount is not sufficient to deter the filing of speculative applications which would slow down the provision of service to the public. A minimum payment may be needed to discourage frivolous bidding. A general minimum upfront payment of \$2,500, as suggested in the comments, is reasonable. As noted earlier, however, we will retain the flexibility to modify this minimum upfront payment in service-specific auction rules if we find that a different amount would better deter speculative filings.

181. On the issue of when an upfront payment should be tendered, there was substantial support in the comments for requiring tender of upfront payments prior to the auction and for permitting assurance of the ready availability of deposits by bidders. See, e.g., comments of AT&T at 33, Nextel at 16-17, and Cellular Communications, Inc. at 14-16. A few commenters, however, argue that, for applicants with special circumstances (such as designated entities and applicants that are local governmental entities), the Commission should permit prospective bidders merely to display or exhibit their upfront payments or submit "highly confident" letters from financial institutions in lieu of tender. See comments of AWCC at 32, Palmer Communications, Inc. at 8, and Duncan, Weinberg, Miller & Pembroke, P.C. at 3. Others favor pre-auction deposits only when the Commission cannot verify the amount of liquid assets available to a prospective bidder. See comments of Unique Communications Concepts at 6.

182. We have considered the suggestions by some commenters that designated entities be permitted to use letters of credit for upfront payments. See, e.g., comments of Minority

¹³⁸ As discussed at n. 138 above, one instance in which we may limit upfront payment requirements would be if we set aside licenses in certain blocks for bidding by designated entities. See Section VI, infra.

PCS Coalition at 9, Palmer Communications at 8, and reply comments of TDS at 16, 17. Similarly, Southwestern Bell and US West suggest that bidders be permitted to submit their upfront payments in the form of Treasury bills with a face amount of the required payment. We believe that these methods of submitting upfront payments would impose too great an administrative burden on the Commission, at least until the Commission has more experience with the conduct of auctions.

183. The use of unconditional letters of credit, for example, would require the Commission to read and evaluate each such letter of credit to ensure that it is in fact unconditional; different banks often use different language in their letters of credit, and the Commission does not have the time or the resources to engage in discussions or negotiations with applicants and their banks to remove or clarify any uncertainties associated with such language. Nor do we think it appropriate to prescribe appropriate language for an unconditional letter of credit; the use of letters of credit was not proposed in the notice of proposed rule making, and we are reluctant to prescribe such language without the benefit of public comment. Moreover, letters of credit commonly have dates of expiry, a complication that we do not face with cashier's checks or wire transfers. With letters of credit, an auction that lasts longer than either the Commission or the applicant expected may cause the applicant to become financially disqualified during the course of the auction.

184. Southwestern Bell's proposal to utilize Treasury bills to satisfy the upfront payment requirement introduces similar complications. Depending on the maturity date of the Treasury bill and the state of the market for such instruments, the actual value of the bill on any given day may be more, less, or the same as the face amount. This amount may even change during the conduct of the auction. We are reluctant to introduce such complications into our auction procedures, at least until we have had further experience with them. We would, however, be willing to consider such an alternative in the future.

185. As set forth in ¶ 171, supra, we conclude as a general matter that to protect the integrity of the auction process, all applicants should be required to tender their upfront payments to the Commission prior to bidding.¹³⁹ We do not believe that allowing auction participants to tender "highly confident" letters provides the Commission with the degree of assurance necessary to ensure that only serious bidders participate in auctions. The same can be said, at least with respect to our preferred simultaneous multiple round auction design, about allowing auction participants merely to exhibit, but not tender, the upfront payment as a condition of bidding. Such proposals would not provide the Commission with a source of funds to satisfy bid withdrawal penalties, and thus would engender too high a risk that the bidder is financially incapable of fulfilling its payment obligations. Furthermore, to require

¹³⁹ Upfront payments must be made to the Commission's lock-box bank. Upfront payments may be made by wire transfer or by cashier's check drawn in U.S. dollars from a financial institution whose deposits are insured by the Federal Deposit Insurance Corporation and must be made payable to the Federal Communications Commission.

the Commission to ascertain that bidders have available sufficient liquid assets would impose an excessive administrative burden on the Commission. We will, however, retain the flexibility to alter the timing of the upfront payment for specific auctions when appropriate. We may determine that an exhibit procedure would function well in conjunction with oral outcry auctions, though we do not believe that it can be used effectively with other auction designs.

186. We choose not to create a general exception to our upfront payment requirements for designated entity and local government applicants. But see Section VI, infra. The danger of insincere bidding, which upfront payments are designed to deter, exists to no less a degree with respect to these groups.

187. Commenters generally argued that the Commission should make prompt refunds of the upfront payments of unsuccessful bidders. See, e.g., comments of JMP Telecom Systems, Inc. at 6. We agree. We will hold all upfront payments until after the auction to which they apply, but as soon as possible we will return the upfront payments of bidders that are not auction winners, are not subject to withdrawal or default penalties, and do not wish to bid for licenses that are to be re-auctioned. In some circumstances, it may be appropriate to retain upfront payments until after the winning bidders have tendered their down payments because further rounds of competitive bidding may be held if down payments are not made.¹⁴⁰ Upfront payments made by a winning bidder will be applied to satisfy its down payment obligations (see discussion, infra).¹⁴¹

188. Given the likely magnitude of some upfront payments and the fact that there will be a significant interval between the date that short-form applications are filed and the auction date, we will not require the filing of upfront payments with short-form applications. To do so would place an unreasonable burden upon applicants by requiring them to dedicate funds for a long period of time, especially if the Commission is unable to pay interest on deposits

¹⁴⁰ We will, however, afford unsuccessful bidders who are not subject to bid withdrawal penalties an opportunity to have their upfront payments returned if they wish to withdraw from further bidding.

¹⁴¹ As explained in subsection C below, a winning bidder will be required to bring its deposits with the Commission up to 20 percent of its winning bids. Thus, a bidder whose upfront payments total 15 percent of the sum of its winning bids will be required to make an additional down payment of only 5 percent of that sum. If, however, a bidder who wins some licenses also defaults on any other license(s), the bid withdrawal penalty discussed below would apply with respect to the defaulted license(s). In such a case, the bidder's upfront payments up to 20 percent of the defaulted high bid(s) will be retained by the Commission, and we will apply to the bidder's down payment obligations on non-defaulted license(s) only such upfront payments that exceed this amount.

held.¹⁴² Upfront payments therefore will be required to be made to the Commission by a date certain, which generally will be no later than 14 days before the scheduled auction. This shorter period will allow the Commission sufficient time to process the data concerning the upfront payments and release a Public Notice listing all qualified bidders. The Commission will set forth specific procedures to be followed in the tendering and processing of upfront payments in the Public Notice to be issued announcing procedures for each auction.

C. Payment for Licenses Awarded by Competitive Bidding

189. In the NPRM, we proposed that, to provide further assurance to the Commission that the winning bidder will be able to pay the full amount of its winning bid, the bidder must tender a significant and non-refundable down payment on the license to the Commission over and above its upfront payment before the auction is terminated. NPRM at ¶ 104. We sought comment on when this additional down payment should be due to the Commission and proposed that, if the winning bidder's upfront payments totalled less than 20 percent of the high bid, the bidder would have to pay the difference promptly. Most of the commenters addressing this issue generally support our proposal that winning bidders increase their deposits with the Commission up to an amount equalling 20 percent of their winning bid or bids. See, e.g., comments of BellSouth at 43-44, PageNet at 35-36, and Telocator at 13. Some commenters feel that a 20 percent down payment requirement would be too high. See comments of Sprint at 18 (prefers a 10 percent down payment).

190. In determining the appropriate level for the down payment, we are balancing several factors. First, the down payment needs to be sufficiently high to ensure that all licensees have the financial capability to attract capital to rapidly deploy their systems and operate them in an efficient manner. Second, the down payment has to be sufficiently high to discourage default between the auction and licensing and ensure payment of the default penalty if such a default occurs. We believe that the upfront payment is not sufficient to ensure the payment of such a default penalty because the potential penalty is likely to be greater during the period between the close of the auction and licensing than during the auction because there is a greater risk of a drop in license values. It is common practice to require a down payment on the order of 20 percent to protect against default in auctions and

¹⁴² In the NPRM, we indicated that the Commission is not currently authorized to establish interest-bearing accounts. NPRM at ¶ 104, n.100. A number of commenters argue that the Commission should take whatever steps are needed to allow it to pay interest on upfront deposits that ultimately will be returned to unsuccessful bidders. See, e.g., comments of Mercury Communications, L.C. at 2, LuxCel Group, Inc. at 8, Pacific Telecom Cellular, Inc. at 6. We are sympathetic to these views, and we are attempting to obtain the necessary authorization that will permit the payment of interest on upfront payments and deposits.

other instances where there is the possibility of default.¹⁴³ Requiring a significant down payment is especially important in spectrum auctions in light of our goal of promoting economic growth. Default could force re-auctioning of the license and might cause significant delays in service provision, and a significant down payment tends to ensure that winning bidders actually qualify as licensees and can build their systems expeditiously. We are nonetheless aware that holding a down payment keeps funds from being available to the auction winner for other productive endeavors. In addition, setting the down payment too high might hamper access by potential licensees with limited access to capital markets. We conclude that a 20 percent down payment is appropriate to ensure that auction winners have the necessary financial capabilities to complete payment for the license and to pay for the costs of constructing a system and protect against possible default, while at the same time not being so onerous as to hinder growth and diminish access. We therefore will require that winning bidders supplement their upfront payments with a down payment sufficient to bring their total deposits up to 20 percent of their winning bid(s).¹⁴⁴

191. With regard to the time for tendering the additional deposit, commenters supported everything from immediate tender before the auction closes to a substantial "grace period." Compare comments of BellSouth at 44 ("[b]idders should be prepared to meet deposit obligations as soon as they make their bid") and reply comments of PageNet at 11 ("winning bidders should be required to pay the full amount of their bids on auction day") with comments of McCaw at 17-18 (payment schedules should include flexibility that "might include an extended but reasonable period of time"). It was also suggested that the Commission should keep auctions open until full deposits are received, whenever that occurs. See comments of AT&T at 35.

192. We have carefully considered the alternative proposals regarding timing of the down payment, and have determined that, to further ensure that bidders are capable of constructing their systems, a down payment of 20 percent of the winning bid generally will be required within five business days after the auction is over.¹⁴⁵ Requiring the down payment

¹⁴³ A 20 percent down payment is required by the U.S. Department of the Interior for bids on offshore oil and gas leases. New Zealand requires a 25 percent deposit be submitted with bids for spectrum licenses. The RTC required only a 10 percent payment within 24 hours of its auction, but required full payment within 7 days of the auction. Lenders frequently require private mortgage insurance when down payments are less than 20 percent.

¹⁴⁴ Thus, if the upfront payment already tendered by a winning bidder, after applying any bid withdrawal penalties, amounts to 20 percent or more of its winning bids, no additional deposit will be required.

¹⁴⁵ As discussed in Section VI.C., infra, an auction winner that is a designated entity entitled to make payments through an installment plan will be required to bring its deposits with the Commission up to only 10 percent of its winning bid after the bidding closes. Such an entity will pay an additional 10 percent of its winning bid to the Commission after a